

REMARKS

The substitute Title proposed by the Examiner is above entered.

The foregoing changes to the Specification were noted as needed in a detailed study thereof.

Independent claims 1, 10, 20 and 24 stand rejected under 35 USC 103 as being unpatentable over Takizawa Patent No. 5,734,425 in view of Lightbody Patent No. 5,471,577. The rejections are respectfully traversed and reconsideration is requested.

Certain broad similarities are noted as between the subject invention and the applied references. Applicants herein use an external apparatus to control certain operations of an image pickup apparatus. Takizawa also use an external apparatus to control certain operations of an image pickup apparatus.

One aspect of applicants' subject invention is to conform the size of an image signal provided by an image pickup apparatus responsively to control by an external apparatus. Lightbody, while not relating at all to optical image pickup, also looks to conform the size of an image signal responsively to control by an external apparatus.

However, the controlled activities of the image pickup apparatus differ fundamentally as between applicants on the one hand and Takizawa on the other hand as will be developed below.

In the reasoning underlying the rejections of all four independent claims, the Examiner advises as follows as respects the teachings of the applied art.

Takizawa discloses an image pickup system comprising: an image sensor (23); a video signal generating means (24); an interface means (29, 35); a control means (29, 36); compression means (col. 3, ln. 9-12); a ROM (col. 3, ln. 30-40, 46-51); a reloadable memory (col. 3, ln. 30-40); wherein the control means communicates with the reloadable memory through the interface means (col. 3, ln. 46-51; col. 4, ln. 33-37, 49-51, 59-62); and wherein the image pickup unit is removable attachable to an external signal processing apparatus (see Fig. 1). Takizawa does not disclose the compression means to be a color space conversion means using a look-up table.

The use of a look-up table to perform color space conversion is well established in image pickup systems as shown by Lightbody (see element 80)...

As noted above, Lightbody does not relate to image pickup systems.

It is believed helpful to discuss several of the controlled activities of applicants' image pickup apparatus. There is of course image size control, as discussed at page 15 of the Specification.

...the size of the image to be picked up is set at the control program 114 which is provided on the PC 102. On the side of the image pickup apparatus 101, picture elements are thinned down for converting an input signal to the set image size on the basis of the setting value...(lines 20-25)

This subsampling is the function also of subsampler and color space converter 80 of Lightbody.

...Subsampling may be accomplished by any of several methods: several adjoining pixels can be averaged together, or a representative subset of the pixels can be filtered out - for instance, selecting only the odd-numbered pixels of the odd-numbered scan lines. Or the two techniques can be combined. For instance, subsampler 80 may only display only every fourth scan line, thereby cutting the number of vertical pixels by 3/4... (Lightbody patent, Col. 4, ls. 37-44)

Another controlled activity of applicants' image pickup apparatus is color space conversion, which is practiced following the above subsampling.

Next, the video signal of 24 bits is converted on the basis of a number-of-color setting value set at the control program 114. The video signal is further subjected to a color space process at a color space converting part 107 to be converted into a data format required for handling by the PC 102. This color space conversion is performed to convert the video signal into a designated color space which is selected from among four kinds of color space including a 16 bit color space, two kinds of 8 bit color space and an 8 bit gray scale.

In the case of two kinds of 8 bit color space, a conversion (look-up) table (LUT) is recorded in a ROM 108 beforehand... (Specification, page 17, ls. 7-19)

This controlled activity is not found in the Takizawa patent. Indeed, the only controlled activity in the Takizawa image pickup apparatus is that the external apparatus may elect to rewrite the operating program to be implemented by the image pickup apparatus.

While the Examiner seemingly interprets such controlled activity to be present in the Lightbody apparatus on the basis of subsampler and color space converter 80 thereof, this apparatus is simply an image size control device, as above discussed.

The Examiner's finding of a look-up table in the Lightbody converter 80 is respectfully submitted as fully misinterpreting the patent. The word look-up table or the acronym LUT are simply not present in the patent. Nor is there any controlled activity as color space conversion in any way related to applicants' above discussed color space conversion following subsampling. Unlike subsampling responsively to a size directive, applicants' color

space conversion involves LUTs diversely corresponding to the different kinds of color space which applicants define.

Claim 1 of the subject application reads as follows.

1. An image pickup apparatus comprising:

an image pickup apparatus including an image sensor for photo-electrically converting a picked-up object image into an electrical signal, a video signal generating part for forming a video signal from the electrical signal, a color space converting part for converting a color space of the video signal, and an interface part for externally transferring the video signal; and

a control part for controlling said image pickup apparatus through said interface part,

wherein the video signal is compressed according to a look-up table held within said color space converting part. (emphasis added)

The Examiner's "obviousness" reasoning is as follows.

...Taking the respective teachings of Takizawa and Lightbody as a whole, it would have been obvious to one of ordinary skill in the art to adapt the image pickup system of Takizawa for color processing. Such a modification would be made by adding a color space conversion means such as that taught by Lightbody to the existing signal processing functions of Takizawa. Takizawa specifically indicates that the signal processing functions can be changed as desired (col. 4, ln. 33-37). Such a modification would enhance the utility of Takizawa's system by allowing it to process and output color video.

Applicants submit that the reasoning is in error in two respects. Firstly, Lightbody does not disclose or suggest applicants' claimed color space conversion as such recitation need be interpreted in light of the teachings of the Specification. Secondly, Lightbody does not disclose or suggest the use of LUTs for any purpose.

Claim 1, in its above underscored, recitations differs fully from the applied art, and is accordingly submitted as patentable.

Claim 10 reads as follows.

10. An image pickup apparatus comprising:

an image sensor for photo-electrically converting a picked-up object image into an electrical signal;

a video signal generating part for forming a video signal from the electrical signal;

a color space converting part for converting a color space of the video signal; and

an interface part for externally transferring the video signal,

wherein the video signal is compressed according to a look-up table held within said color space converting part. (emphasis added)

Claim 10 will be seen, in its above underscored content, to include the recitations above discussed for claim 1 and the argument on behalf of patentability of claim 1 applies equally to claim 10, which is accordingly submitted as patentable.

Claim 20 reads as follows.

20. An image pickup unit comprising:

image pickup means for picking up an optical image to form a picked-up image signal;

interface means for performing communication with an external signal processing apparatus; and

compression control means for controlling and changing a compression characteristic for the picked-up image signal of said image pickup means according to a control signal supplied from external signal processing apparatus through said interface means. (emphasis added)

The only controlled activity in the Takizawa image pickup apparatus is that the external apparatus may elect to rewrite the

operating program to be implemented by the image pickup apparatus. Takizawa thus do not disclose or suggest that the external apparatus control a compression characteristic of an image pickup apparatus.

The Examiner's finding that Lightbody teaches "image pickup systems" is respectfully submitted as fully misinterpreting the patent. Lightbody clearly does not deal with applicants' control of an image pickup apparatus including an image sensor for photo-electrically converting a picked-up object image into an electrical signal.

To the extent that the applied prior art does not disclose or suggest the above-underscored content of claim 20, i.e., an image pickup apparatus having its image signal compression characteristic controlled externally thereof, claim 20 is submitted as patentable.

Claim 24 reads as follows.

24. A picked-up image signal processing apparatus comprising:

interface means for performing communication with an image pickup unit including image pickup means for picking up an optical image to form a picked-up image signal; and

transmission control means for transmitting to said image pickup unit through said interface means a control signal for controlling and changing a compression characteristic of said image pickup means. (emphasis added)

The distinctions over the prior art noted above for claim 20 apply equally to the above-underscored content of claim 24 as does the argument on behalf of patentability. Claim 24 is submitted as patentable.

It is further submitted that the combination is not proper at law, i.e., as lacking the requisite "suggestion". The Federal Circuit has stated that, for an invention to be considered obvious, there need not be an explicit "suggestion" in the prior art. It is only necessary that the inventor apply "knowledge clearly present in the prior art". In re Sernaker, 217 U.S.P.Q. 1, 6 (Fed. Cir. 1983). In reversing the Board, the Court expressly noted that none of the prior art disclosed what the applicant had done in his invention.

Such is clearly the case here based upon the lack of showing in both of the cited references of the aforesaid compression control activity in an image pickup apparatus by external input through an interface.

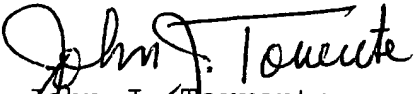
For the above reasons, claims 1, 10, 20 and 24 are submitted as patentable. Reliance is placed on In re Fine, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) and Ex parte Kochan, 131 USPQ 204 (Bd. App. 1960) for allowance of the dependent claims, since they differ in scope from parent claims which are submitted as patentable.

Patentability of the pending claims is believed to have been established or acknowledged. Accordingly, it is submitted that this application now in condition for allowance, except for the filing of formal drawings. Indication to that effect is respectfully solicited.

If the Examiner believes that an interview would expedite consideration of this Amendment or of the application, request is

made that the Examiner telephone the undersigned counsel for applicants at (212) 682-9640.

Respectfully submitted,


John J. Torrente
Reg. No. 26,359
An Attorney of Record

ROBIN, BLECKER & DALEY
330 Madison Avenue
New York, New York 10017